DEPARTMENT OF DEFENSE
COMMANDER
U.S. JOINT FORCES COMMAND
1562 MITSCHER AVENUE SUITE 200
NORFOLK, VA 23551-2488

IN REPLY REFER TO:

6 October 2009

MEMORANDUM FOR U.S. JOINT FORCES COMMAND

Subject: Vision for a Joint Approach to Operational Design

1. In future operations as in the past, joint force commanders will employ military capabilities and seek unity of effort with interagency and multinational partners to solve complex problems presented in a complicated strategic landscape. Clearly, understanding and describing the nature of the problems they face and the approaches they will follow to achieve desired solutions in a constantly changing operational environment will challenge these commanders. They have faced such challenges before, and good commanders typically have developed sound solutions by leveraging foresight and judgment built on a foundation of experience, military training, education, and personal study.

2. Established joint processes, such as operational design and joint operation planning, provide a fundamentally sound problem-solving approach. However, staffs have been seen to often apply these processes mechanistically, as if progressing through a sequence of planning steps would produce a solution. I would expect this habit to be common particularly in organizations where a commander reacts to these processes rather than leads them. "Over-proceduralization" inhibits the commander's and staff's critical thinking and creativity, which are essential to finding a timely solution to complex problems. An approach that does not emphasize thinking and creativity is incomplete. My assessment is that our current doctrinal approach to fostering clear, careful thinking and creativity, particularly early in design and planning, is insufficient and ineffective.

3. This challenge has been at the core of a multi-year "design" initiative spearheaded by the Army. Their work has focused on improving commanders' abilities to think deeply about the fundamental nature of a complex military problem; to design a broad approach to achieving objectives and accomplishing the mission; and to determine if, when, and how to change that approach when circumstances change. The other Services as well as the joint community are beginning to appreciate that the Army has achieved positive results with its initiative, and I believe the Army has demonstrated the value of this new approach to operational design.

4. Unity of effort is essential to meet the complex challenges described in the *Joint Operating Environment*. Participation of our interagency and multinational partners in the interest of a comprehensive, unified approach to operations is important to the commander's effort to design effective operations. The commander must decide how and when to include other partners in the early design effort, and understand that the resulting operational approach may, of necessity, be a consensus-based product. For this purpose and others, we must continue to improve our ability to clearly communicate with our partners and external audiences. The Army's "mission narrative" is one potential approach to this challenge. Another is the "C6 construct," which uses a set of six considerations — *context*, *consultation*, *collaboration*, *coordination*, *control*, and unity of *command* — to help commanders organize their thoughts. The joint community could adapt this model to facilitate the commander's interaction with external audiences.

5. USJFCOM will assume advocacy for migrating design-related improvements to joint doctrine, joint training, and joint professional military education as swiftly as possible. Setting the problem in its proper context is critical to the utility of force and to solving security challenges. This effort will require a whole of JFCOM, cross-departmental approach. The attached "Vision for a Joint Approach to Design" outlines the key focus areas. My lead for this effort is Director, J7.

J. N. MATTIS
General, U.S. Marines

Attachment:
(1) Vision for a Joint Approach to Operational Design

VISION FOR A JOINT APPROACH TO OPERATIONAL DESIGN

First, in designing joint operations, the joint force commander must come to grips with each operational situation on its own terms, accepting that this understanding rarely will be complete or entirely correct, but at best will approximate reality. The Joint Operating Environment describes complex, globalized challenges for which the underlying causes and dynamics will be anything but obvious, while the repercussions of action often will be broad and unpredictable. The interests of various stakeholders may be unclear, and even identifying those stakeholders may be difficult. In this environment, the joint force cannot afford to apply preconceived methods reflexively, but instead must conform its methods to the specific conditions of each situation.

Capstone Concept for Joint Operations
15 January 2009

Introduction

Military operations, particularly those involving combat, have always been challenging. *The Joint Operating Environment (JOE)*[1] advises that today's operational environment challenges us even more with increasingly complex geopolitical circumstances, the emergence of non-state actors, rapid technology change, and our inability to accurately forecast how threats will emerge and what form they will take. Adaptive adversaries who possess a broad range of asymmetric capabilities and home-field advantages will also confront us. Strategic and operational problems that we cannot solve with military ways and means alone are the norm rather than the exception. The *Capstone Concept for Joint Operations (CCJO)*[2], which complements the JOE, guides force development and experimentation consistent with the Chairman's vision for how future joint forces will operate. Together, the JOE and CCJO provide an environmental and conceptual context for near-term joint force improvements such as those described in this paper.

Standard planning processes, such as the Army's military decision-making process and the more recent joint operation planning process, have served us well to this point; however, commanders and staffs generally tend to "over-proceduralize" these processes and use them somewhat mechanically. The complex nature of current and projected challenges requires that commanders routinely integrate careful thinking, creativity, and foresight must be integrated and become routine. Commanders must address each situation on its own terms and in its unique political and strategic context rather than attempting to fit the situation to a preferred template.

In the *Joint Concept Development Vision*, I wrote that focused and clearly stated ideas about the challenges we face and potential ways for dealing with those challenges are at the heart of future force and capability development.[3] Ongoing design-related initiatives by the Army and

---

[1] Refer to USJFCOM publication *The Joint Operating Environment (JOE)*, 2008, for a historically informed, forward-looking effort to discern more accurately the operational challenges we will face.
[2] Chairman of the Joint Chiefs of Staff *Capstone Concept for Joint Operations* Version 3.0, 15 January 2009.
[3] USJFCOM memorandum, subject: *Joint Concept Development Vision*, 28 May 2009

Marine Corps are investigating methods of dealing with future challenges through critical and creative thinking directed at understanding, visualizing, and describing complex problems and devising approaches to resolve them. The joint community must leverage these efforts to improve how we design and plan joint operations.

The Current Baseline

Every echelon of command plans for the employment of military forces in operations that can range from combat to security, engagement, and relief and reconstruction activities. Planning is fundamental to military activities even when the commander is in a supporting role to other agencies, such as in relief and reconstruction. Planners integrate military capabilities and actions with those of other instruments of national power and our multinational partners in time, space, and purpose to achieve national and multinational objectives. Planning is a problem-solving process, no matter the mission, the echelon of command, or the operational circumstances. But the focus on procedural steps and details has tended to obscure the importance of the underlying creative process, a process that focuses early on problem-setting vice problem-solving. Planning without thorough and careful thinking is incomplete, is destined to yield sub-optimal results, and could focus the joint force on solving the wrong problem.

Our current doctrinal approach to creativity is insufficient, but joint publication (JP) 3-0, *Joint Operations*, provides a foundation upon which we can build. JP 3-0 describes *operational art* as "The application of creative imagination by commanders and staffs — supported by their skill, knowledge, and experience — to design strategies, campaigns, and major operations and organize and employ military forces."[4] *Operational design* — the conception and construction of the framework that underpins a campaign or major operation plan and its subsequent execution[5] — provides a number of *design elements* to support operational art and the planning process.[6] Operational art and design have evolved since their introduction in the 1993 JP 3-0. However, our current doctrine falls short of providing a coherent operational design process that helps the commander visualize the desired state and devise an approach to a complex operational problem. This should not be a mysterious process. Upcoming revisions of joint doctrine must take design to the next level, and we must describe and teach it to the joint community in a way that improves both planning and execution of joint operations.

The Challenge

How does the commander understand the operational environment; frame a complex, ill-structured problem; design a broad, operational approach that gives direction to planning; and know how to adjust the approach when circumstances change in order to achieve objectives and accomplish the assigned mission?

---

[4] Joint Publication (JP) 3-0, *Joint Operations*, 17 September 2006 (incorporating Change 1, 13 February 2008, p. IV-2.

[5] Ibid, p. IV-3.

[6] See Chapter IV of JP 5-0, *Joint Operation Planning*, for a discussion of operational design elements such as center of gravity, objective, and line of operations.

Design Development

One published example or recent design work is Chapter 4 of the multi-Service Army Field Manual 3-24/Marine Corps Warfighting Publication 3-33.5, *Counterinsurgency*. Other draft work is in progress.[7] TRADOC's School of Advanced Military Studies at Fort Leavenworth has developed a design-focused portion of its curriculum to continue the conceptual work through instruction and practical application.[8] In addition, commanders are experimenting in the field right now with great results. The Air Force and Navy have also explored design and have participated in a number of multi-service Flag/General Officer senior leader forums focused on the art and science of operational design and command.

Our formal joint doctrine development, training, education, and experimentation processes must examine the results of the Services' work from the joint force commander's perspective to determine how the potential benefits of these efforts can improve the joint force's planning and operations. This work is generating a number of valuable ideas. USJFCOM will investigate these ideas and decide how to integrate them in joint doctrine, training, and professional military education. The ideas fall into four general areas, which I believe show promise for joint operations: *understanding the problem*; understanding *the operational environment*; designing *an approach* to solve the problem; and *reframing the problem* when circumstances change.

- Emphasis on Understanding the Problem. Understanding the problem is essential to solving the problem. Problems that require commitment of military capabilities can range from relatively simple and well-structured to extremely complex and ill-structured. Circumstances that require the introduction of combat are never simple, although some combat situations are less complex than others. Likewise, some irregular warfare circumstances can be extremely complex and their operational and strategic objectives more difficult to achieve than those of traditional military operations. The initial observable symptoms of a crisis often do not reflect the true nature and root cause of the problem, so commanders and staffs must devote sufficient time and effort to correctly frame the problem before devising a detailed solution. Getting the context right as early as possible helps the commander attack the right problem.

  Obviously the United States should commit its military capabilities to solve a problem, particularly in combat, only for a clearly stated strategic purpose. This purpose typically is represented by strategic objectives (ends) that guide how commanders use their ways and means; however, even a clear strategic purpose and set of objectives can belie the problem's true nature. Particularly in complex situations, our early actions might address only symptoms of a more fundamental problem. A more sustainable solution to the problem often requires addressing root economic, social, or political issues which beg for early consultation across the interagency community. We often extend or expand joint operations begun in response to the obvious symptoms in a crisis to help address the core problem. Comprehending the underlying causes of the problem before operations begin will help the commander correctly frame the problem, design a coherent

[7] Army FM 5-0 (revised final draft), *Operations Process*, 5 June 2009. Chapter 3 discusses design.
[8] See *Art of Design* Student Text Version 1.0, School of Advanced Military Studies, 24 September 2008.

approach that addresses later phases of the campaign, and avoid undesired consequences in earlier phases.

- Understanding the Operational Environment. Understanding the problem is only one step toward the solution. The commander must be able to describe both the state of the operational environment when operations begin and how the environment should look when operations conclude in order to visualize an approach to solving the problem. This can seem to be an overwhelming challenge early in the design process, because the operational environment will change significantly during the course of the operation due to the actions of the joint force and to other influences beyond the commander's control. Most systems in this environment are complex, adaptive, and in flux. They will change beyond what we can easily observe.

  Joint intelligence preparation of the operational environment (JIPOE) is the joint process through which the joint force intelligence directorate manages the analysis and development of products that help the commander and staff understand the complex and interconnected operational environment.[9] Thus the J2 is a key player in the early design effort, and must be responsive to the commander's design priorities. The commander can help the J2 by specifying critical information requirements early in the process to focus JIPOE toward specific products that support the design effort. These products help the commander understand how the joint force's actions might affect the relevant political, social, economic, informational, and other factors that comprise the current environment and affect moving the system to the desired state.

  Although the J2 leads this effort for the commander, the intelligence staff collaborates with a variety of external sources to construct the clearest possible picture. Independent of the J2's efforts, the commander will interact with higher, subordinate, and supporting commanders, agency leaders, multinational partners, cultural experts, US ambassadors in the operational area, and other key sources. Each of these may provide bits and pieces of information that contribute to understanding the environment and discerning the true nature of the problem. Nevertheless, I want to reinforce that conflict is inherently complex and unpredictable. The enemy's free will, courage, imagination, and resolve deny predictability in most aspects of war. Surprise is a common characteristic of warfare. A comprehensive understanding of the problem in the context of the operational environment mitigates paralysis and enhances the ability to adapt in stride when surprise strikes.

- Developing an Operational Approach. Understanding the problem and the environment provides operational context for visualizing a broad solution. With this context, the commander can begin to develop an *operational approach*, which Army writings describe as "...a visualization of the broad general actions that will produce the conditions that define the desired end state."[10] Planners consider both direct and indirect methods to address the problem, and the operational approach may combine these

---

[9] JP 2-10.3, Joint Intelligence Preparation of the Operational Environment, 16 June 2009, describes the JIPOE process in detail.

[10] Army FM 5-0 (revised final draft), p. 3-14.

methods. *Lines of effort* and *lines of operations* are ways to depict an operational approach, but there are others. From a joint perspective, we should explore an *operational approach* or similar construct as a formal output of the design process that is the impetus for subsequent planning. In particular, this product could inform the commander's initial planning guidance and commander's initial intent statement. As the operational approach emerges, the commander and staff devise indicators of progress that they will incorporate into the plan or order and use during execution. Certain assessment indicators act as triggers during the operation to help the commander determine the necessity to reframe the problem and revise the original operational approach.

Challenging the commander's ability to finalize an operational approach is the reality that U.S. joint forces are seldom employed unilaterally. Operations often occur in partnership with the military forces of allies and coalition forces, US and foreign government agencies, state and local government agencies, and intergovernmental and nongovernmental organizations. We can best achieve strategic objectives when a comprehensive approach elicits the maximum contribution and unique but complementary capabilities from each U.S. Service component and agency as well as our multinational partners. An operational approach can be especially challenging when the methods for achieving objectives are at odds with each other, such as the necessity for combat in counterinsurgency and counterterrorism concurrent with benign initiatives to support governance and reconstruction and win the hearts and minds of the relevant population. The commander must decide how and when to include other partners in the early design effort, and understand that the resulting operational approach may, of necessity, be a consensus-based product. To quote an old friend, "*...in a war among the people, success will depend on the confluence of civil and military effort, with the civil piece having primacy (always) – so don't start kicking down the door unless you have a civil infrastructure ready to support the campaign.*"

- Reframing the Problem. The enemy always gets a vote in the outcome, so commanders are well advised to heed the often-quoted warning that *no plan survives contact with the enemy*. The operational environment can change quickly and subtly as well. This challenge can be greater in counterinsurgency, counterterrorism, and similar "irregular" operations than it is in larger-scale combat, since the adversary has more flexibility to determine how, when, where, and whether to fight. Neutral population factions can shift between support for an insurgent and support for an established regime with little warning. Commanders conduct operations subject to continuous assessment of results in relation to expectations, modifying both the understanding of the situation and subsequent operations accordingly.

Assessment focused on the operational approach should tell the commander whether the joint force is "doing the right things" to set conditions and achieve objectives, whereas tactical assessment typically determines if the force is "doing things right." The distinction is critical, because doing the wrong things right will not accomplish the mission. Assessment helps the commander ensure that the broad operational approach remains feasible and acceptable in the context of higher policy, guidance, and orders. If the current approach is failing to meet these criteria, or if aspects of the operational

environment change significantly, the commander may decide to begin a ***reframing*** effort and revise earlier design conclusions and decisions that led to the current design inadequacies. This might result in small adjustments to current operations or a branch to the plan, or reframing could require a sequel involving a new operational approach, new objectives, and organizational realignments.

The Commander's Role in Design

To be absolutely clear, the commander actively leads the design effort. Too often, commanders default to the planning staff, even to the point that the staff drafts the commander's planning guidance and intent statement. This approach may work when addressing relatively simple planning problems; but many contemporary operational challenges that seem "simple" can be deceptively complex, particularly when their impact is viewed within the larger strategic framework. The commander's thinking, foresight, instinct, experience, and visualization are particularly important during the early design effort, when identifying the true nature of a complex problem and designing an approach to the solution will drive subsequent planning and execution.

> "*When all is said and done, it is really the commander's coup d'oeil, his ability to see things simply, to identify the whole business of war completely with himself, that is the essence of good generalship.*"
>
> Carl von Clausewitz
> On War

Commander-centric organizations out-perform staff-centric organizations. A commander's perspective of the challenge is broader and more comprehensive than the staff's due to interaction with superior, peer, and subordinate commanders, agency leaders, and multinational partners. Clear commander's guidance and intent, enriched by the commander's experience, and instinct, are common to high-performing units. The commander can reinforce this perspective by leading the staff through the design process. This approach requires routine interaction with the staff, decisions at key points in the process, and guidance on development of products. The commander should create conditions that facilitate the staff's thinking and sharing of ideas and recommendations. The commander should assume ownership of the operational approach, a product the commander and staff can use to explain the operational problem and approach to the solution to superiors, subordinates, other US agencies, and multinational partners.

> "*Always keeping the larger perspective foremost in mind, the sage commander clearly sees both the details of the world and the environment in which these details occur. Holding both of these in his mind at the same time, he begins to see patterns that the details form. Perceiving their interconnectedness, he knows the arcs through which they may progress. Yet there is no certainty about how any single thing will turn out. This is how the sage commander begins to read the world and see the Tao of things.*"
>
> Sun Tzu
> The Art of War

A commander might tend to expect that the higher headquarters has correctly described the operational environment, framed the problem, and devised a sound approach to achieve the best solution; but strategic guidance can be vague, and the commander must interpret and translate it for the staff. Higher-level commanders usually have a broader contextual perspective that helps them understand how the potential campaign or operation relates to the larger strategy. But subordinate commanders often have a better understanding of the specific circumstances and nuances that comprise the crisis. Both perspectives are essential to a sound solution. Subordinate commanders should be aggressive in sharing their perspective with their superiors early in design, challenging ill-informed assumptions, and resolving differences at the earliest opportunity.

The Way Ahead

We are beyond concept development in this important area. The Army and Marine Corps have investigated design in various venues. In particular, the Army is ready to work design-related ideas into its next *Operations Process* field manual, and is incorporating related instruction in its professional military education. Joint doctrine already introduces operational art and discusses various elements of operational design in some detail. Doctrine's improvement of design should focus on helping commanders and planners think about complex problems and broad approaches rather than over-emphasizing the associated process steps. Along with JP 3-0, our keystone JP 5-0, *Joint Operation Planning*, is a primary target on the 50-meter line. It is in revision now, with a first draft due in December 2009. The time and circumstances are right for the joint community to carefully consider the investigative work to date and begin to improve joint doctrine, training, and joint professional military education accordingly.

USJFCOM actions:

- J7 will lead our effort and continue to incorporate design's value-added ideas in joint doctrine, training, and PME. J7 will continue its work on a commander's handbook that will provide additional details on design and its interaction with the planning process. My intent is for this pre-doctrinal handbook to tap the Services' efforts through solid research and collaboration, and then help the joint community understand and debate design-related issues in time to inform JP 3-0 and JP 5-0 development. This should facilitate working through the official doctrine development process to ensure that design-related improvements are "born joint." Concurrently, J7 will continue to share design insights with senior leaders during KEYSTONE, CAPSTONE, and PINNACLE sessions and combatant command training exercises.

- J9 will help J7 leverage the groundbreaking success of experimentation on the *Capstone Concept for Joint Operations* and revision of the *Joint Operating Environment* to the extent that these key documents relate to design.

Conclusion

Design does not replace planning, but planning is incomplete without design. The balance between the two varies from operation to operation as well as within each operation. Operational

design must help the commander provide enough structure to an ill-structured problem so that planning can lead to effective action toward strategic objectives. Executed correctly, the two processes always are complementary, overlapping, synergistic, and continuous.

The ideas expressed in this paper are not new. Throughout history, good commanders have recognized the complexities of armed conflict and the importance of their role in its resolution. Operational design is clearly evident in the work that was done to plan the maritime campaign in the Pacific in World War II and in General Matthew Ridgway's recapture of the Korean peninsula in early 1951. Likewise, design is not new to joint doctrine, but I believe we can substantially improve doctrine's current treatment and change JPME and joint training accordingly to the benefit of current and future leaders at all levels. We are in a distinctive period in which JP 1, JP 3-0, and JP 5-0 are being revised almost concurrently over the next 18-24 months, and USJFCOM is in a unique position to influence these key publications. Army and Marine Corps work in particular has presented the joint community with an opportunity to consider, debate, and incorporate potentially significant doctrinal improvements. Furthermore, senior leaders at the June 2009 CCJO Wargame commented on the importance of reinforcing the central role of the commander in design, and they highlighted the need for additional design development.

The topic of "design" is important, and I believe the potential added value of this work is clear. The time is right for USJFCOM to assume joint advocacy for the way ahead in this area.